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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,299	05/15/1998	Frank D. Guffey	WRIPLASTIC-Div	9989

7590 04/08/2002

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EXAMINER	
GRIFFIN, WALTER DEAN	

ART UNIT	PAPER NUMBER
1764	7

DATE MAILED: 04/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

T.D-7

Office Action Summary	Application No.	Applicant(s)	
	09/735,299	GUFFEY ET AL.	
	Examiner	Art Unit	
	Walter D. Griffin	1764	

-- Th MAILING DATE of this communication app ars on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *08/525,639* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

If applicant desires priority under 35 U.S.C. 120 based upon a previously filed copending application, specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed on or after November 29, 2000, any claim for priority must be made during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2) and (a)(5). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A priority claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed claim for priority under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) a surcharge under 37 CFR 1.17(t), and (2) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was

unintentional. The Commissioner may require additional information where there is a question whether the delay was unintentional. The petition should be directed to the Office of Petitions, Box DAC, Assistant Commissioner for Patents, Washington, DC 20231.

The examiner notes that the declaration refers to U.S. Application 08/028844 and claims the benefit of this application under 35 USC 120. It is unclear if applicant desires the benefit of this application because the specification does not contain a reference to this application.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).
>
> It does not state that the person making the oath or declaration has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.

It appears to the examiner that the declaration is defective because the first page of the declaration is missing from the application file.

Claim Objections

Claim 2 is objected to because of the following informalities: In line 8 of claim 2, the word "then" should be "than". Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities: On essentially every page of the specification including the claims, holes punched in the paper to assemble the file have obscured and/or removed words from the first and/or second lines of every page.

Appropriate correction is required.

A substitute specification including the claims is required pursuant to 37 CFR 1.125(a) because a large number of amendments is required to correct the problem caused by the holes.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and must be accompanied by: 1) a statement that the substitute specification contains no new matter; and 2) a marked-up copy showing the amendments to be made via the substitute specification relative to the specification at the time the substitute specification is filed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 3-16 are indefinite because of the expression "sufficient free radical content" in step c of claim 1. Since the desired effect resulting from the use of a sufficient content is not claimed, the scope of the claim cannot be ascertained.

Claim 2 is indefinite because it is unclear what other plastics are included in the expression "other waste plastic". Therefore, the scope of the claim cannot be ascertained.

Claim 2 is also indefinite because it is unclear to where the burnable products are recycled back.

Claim 2 is also indefinite because it uses improper language prior to the listing of the plastics and oil. An example of proper language follows: "A process for the recycling of waste plastic comprising mixing comminuted waste plastic ***selected from the group consisting of*** polyethylene, polypropylene, polystyrene, polyethylene terephthalate, polyvinyl chloride, and combinations thereof, with oil ***selected from the group consisting of*** waste motor oil, fluidized catalytic cracker slurry oil, distillation tower vacuum bottoms, and heavy heating or bunker oil and combinations thereof, and free radical catalyst precursor ..." .

Claim 5 is also indefinite because it is unclear what additional substance is added.

Claims 6-8 are also indefinite because of the expression "an appropriate amount" in claim 6. Since the desired effect resulting from the use of the appropriate amount is not claimed, the scope of the claim cannot be ascertained.

Claim 7 is also indefinite because it is unclear what waste plastics are encompassed by the expression "particular waste plastic material". Therefore, the scope of the claim cannot be ascertained.

Claims 9 and 10 are also indefinite because of the expression "sensing the relative amount of free radicals likely to be present" in each claim. It is unclear what step or steps are required to sense the relative amount of the free radicals. Therefore, the scope of the claims cannot be ascertained.

Claims 11-13 are also indefinite because each claim refers to recycling but the point to where the diluent is recycled is not clear.

Claim 15 is also indefinite because the expression "heavy oil" is a relative expression that renders the claim indefinite. The expression is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 16 is also indefinite because the expression "low value oil" is a relative expression that renders the claim indefinite. The expression is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Imparato et al. (4,327,237).

The Imparato reference discloses a process of decomposing plastic. The process comprises forming a solution of the plastic in mineral oil and thermally cracking the solution at a temperature between 250° and 350°C for 15 to 45 minutes. The free radical content of the solution is controlled by adding a substance to the solution. See col. 2, lines 13-53.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imparato et al (4,327,237).

The Imparato reference discloses a process of decomposing plastic. The process comprises forming a solution of the plastic in mineral oil and thermally cracking the solution at a temperature between 250° and 350°C for 15 to 45 minutes. The free radical content of the solution is controlled by adding a substance to the solution. See col. 2, lines 13-53.

The Imparato reference does not disclose the temperature of claim 4 and does not disclose the oils of claims 15 and 16.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by utilizing a temperature of 375°C because this temperature is only slightly higher than that which is disclosed and therefore its use would still be expected to result in effective thermal cracking.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Imparato by utilizing the claimed oils as the solvent because these claimed oils are similar to those disclosed and therefore would be expected to be effective in forming the desired solution.

Claims 1-6, 9, 10, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (3,700,615) in view of Vanlautem et al. (4,145,526).

The Scott reference discloses a process for decomposing waste rubber. The process comprises mixing the rubber with a hydrocarbon to form a solution. The hydrocarbon can be an oil such as a fuel oil. The solution also contains a free radical initiator. The free radical initiator liberates free radicals upon heating and the amount to be added is determined by experiment. Experimentation would necessarily include measurements of process conditions. The

decomposition occurs at temperatures not in excess of about 370°C. See col. 2, lines 31-58, 70, and 71; col. 3, lines 1-7 and 69-75; and col. 4, lines 1-22 and 49-62.

The Scott reference does not disclose the waste plastic, does not disclose the specific oils of claims 2, 15, and 16, and does not disclose a temperature of about 375°C as in claim 4.

The Vanlautem reference discloses depolymerization of plastics can be achieved by dissolving polymers in a solvent that contains compounds that generate free radicals. The mixture is then thermally treated. See col. 1, lines 17-22.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by depolymerizing plastics such as those claimed as suggested by Vanlautem because plastics would be expected to be equivalently processed as compared to the rubber of Scott thereby resulting in the production of valuable products.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by utilizing the claimed oils as the solvent because these claimed oils are similar to those disclosed and therefore would be expected to be effective in forming the desired solution.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Scott by utilizing a temperature of 375°C because this temperature is only slightly higher than that which is disclosed and therefore its use would still be expected to result in effective thermal cracking. Additionally, Scott discloses an upper temperature limit of about 370°C. The use of word "about" indicates that temperatures slightly higher than 370°C (e.g., 375°C) would be expected to be effective.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (3,700,615) in view of Vanlautem et al. (4,145,526) as applied to claim 1 above, and further in view of Coenen et al. (4,642,401).

The previously discussed references do not disclose recycling of the solvent.

The Coenen reference discloses a process for producing liquid hydrocarbons from waste plastic. The process comprises treating the plastic with a solvent and includes the recycling of the solvent. See claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the previously discussed references by recycling the solvent as disclosed by Coenen because the economics of the process will be improved since costs will be reduced.

Allowable Subject Matter

Claims 7 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose adding the claimed plastic material to assure an appropriate amount of free radical precursor in the mixture.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses for converting plastics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
April 2, 2002